DrillSoft®

DRILLING SOFTWARE + AUTOMATION

WWW.DRILLSOFT.COM

Why are we doing what we do?

DrillSoft® is dedicated to empower and inspire the industry so that together we can improve how we operate and provide the world with energy through safer, sustainable and environmentally cautious drilling practices.

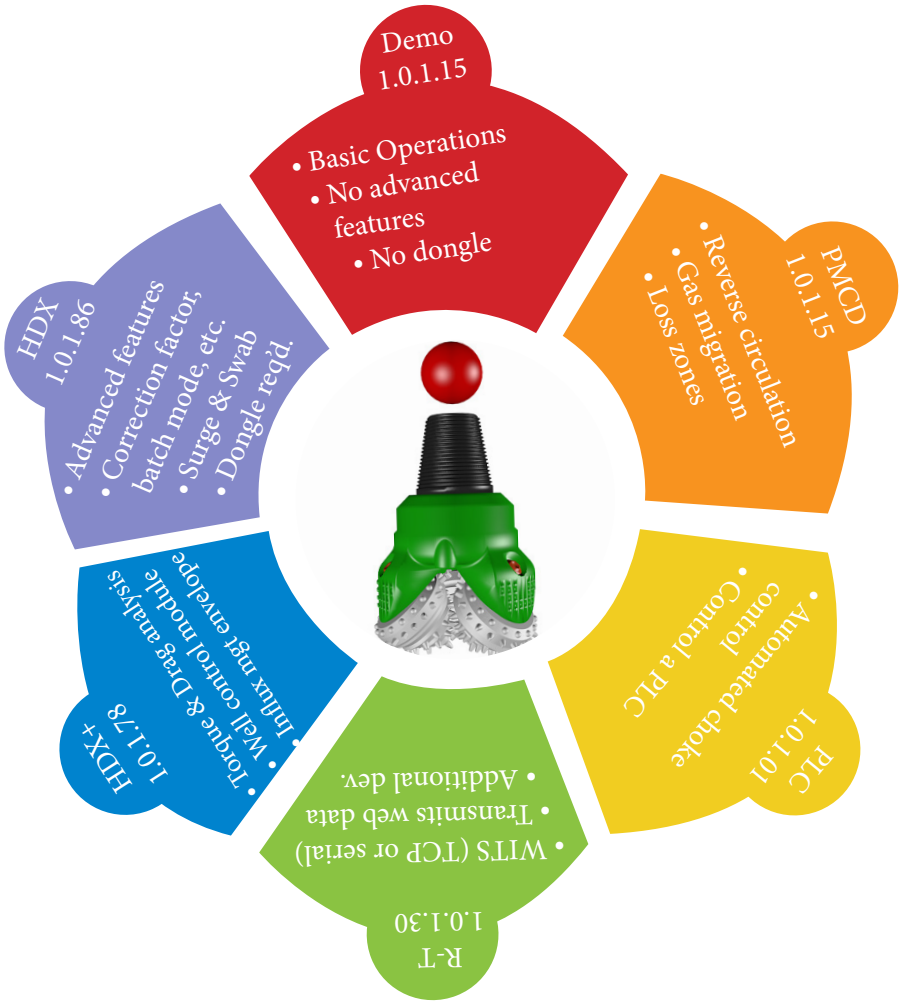
How are we doing this?

DrillSoft® is committed to provide cutting edge, transient and real-time drilling hydraulics solutions to better plan and execute drilling operations and to be prepared for all events that may jeopardize the safety of our people and environment.

What are we doing?

DrillSoft® delivers budget friendly and highly accurate drilling hydraulics software to help our industry with the planning and execution phase of their drilling operations. DrillSoft® achieves its mission by staying proactive and continuously improving to add new features and models to the software it provides. The focus of DrillSoft® is the future, to become a company at the forefront of innovation known for its ground breaking and user friendly drilling hydraulics solutions.

DrillSoft® Software Packages

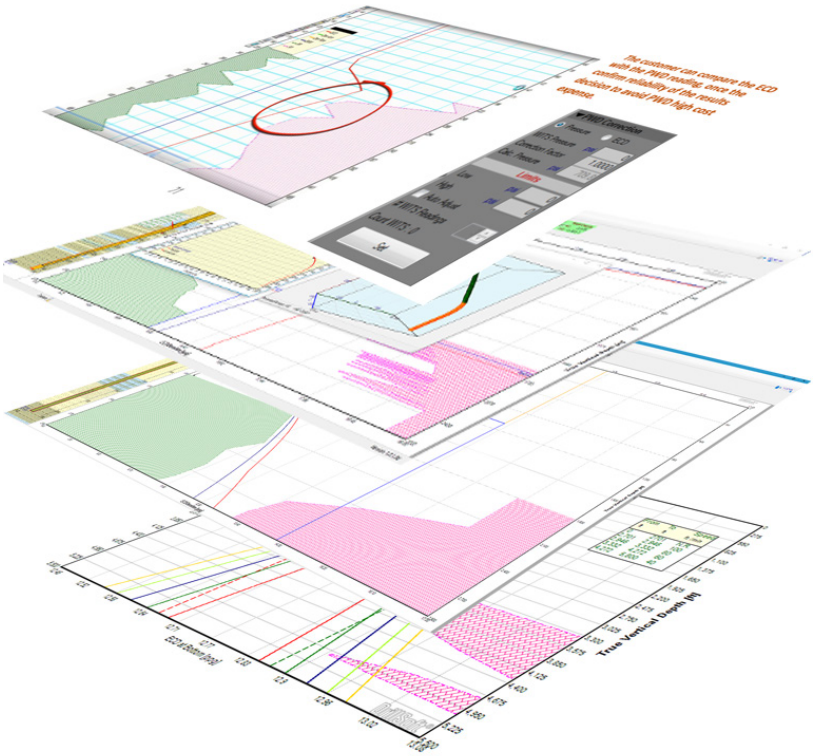


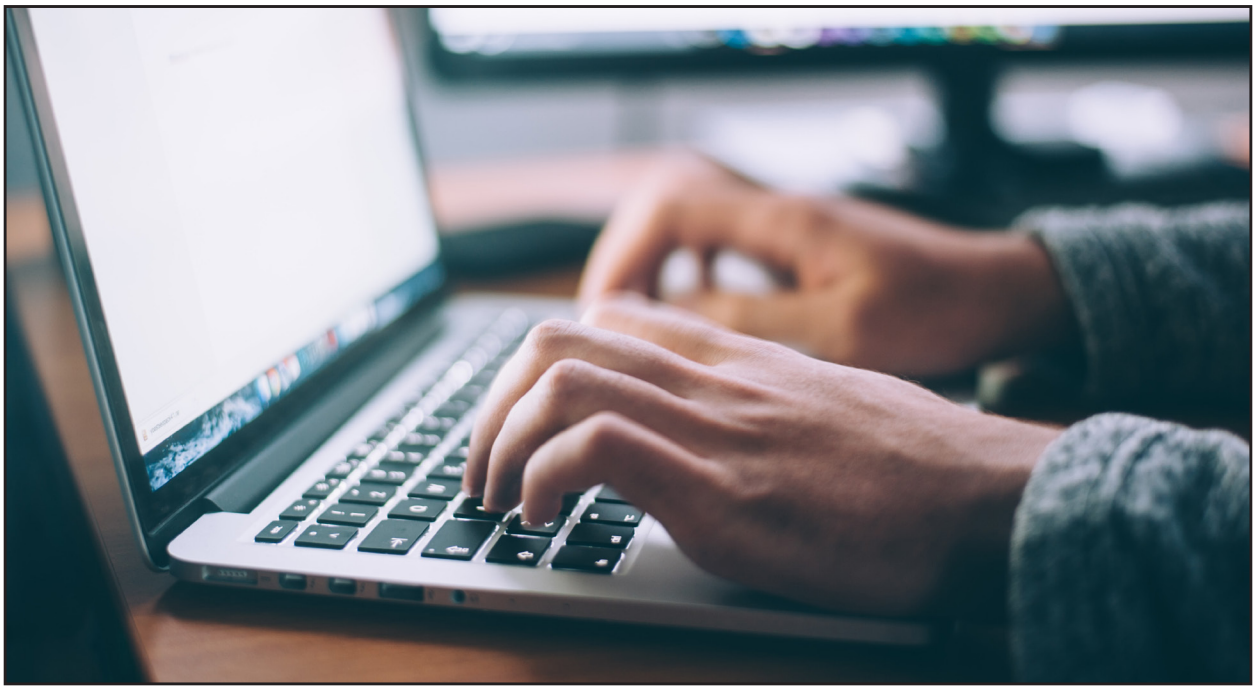
Drillsoft Version	HDX	HDX Plus	Real-Time	PLC	PMCD
Temperature/Pressure Correction Factor	✔	✔	✔	✔	✔
Tool Joint Effect	✔	✔	✔	✔	✔
RPM effect	✔	✔	✔	✔	✔
Cuttings Load	✔	✔	✔	✔	✔
Rollover Mode	✔	✔	✔	✔	✔
2D/3D Views	✔	✔	✔	✔	✔
Kick Tolerance Tool	✔	✔	✔	✔	✔
Quick Friction Calculations	✔	✔	✔	✔	✔
Batch Mode	✔	✔	✔	✔	✔
Surge & Swab Analysis	✔	✔	✔	✔	✔
Well Control	✘	✔	✘	✘	✘
Pre-Kick Sheet	✘	✔	✘	✘	✘
IME	✘	✔	✘	✘	✘
Multiphasic Flow	✘	✔	✘	✘	✘
Torque & Drag	✘	✔	✔	✔	✘
Replay Data	✘	✔	✔	✔	✘
WITS (receive/send)	✘	✘	✔	✔	✘
Web Real-Time Monitoring	✘	✘	✔	✔	✘
Choke Control	✘	✘	✘	✔	✘
Reverse Circulation/Bullheading	✘	✘	✘	✘	✔
Active Losses	✘	✘	✘	✘	✔

HDX Software

DrillSoft® HDX is a single-phase transient well model that calculates and evaluates down-hole Pressures and Temperatures during drilling, circulating and shut-in operations for Land and Deep-Water Offshore Wells. DrillSoft® HDX provides a wide range of tools to plan wells. These features include:

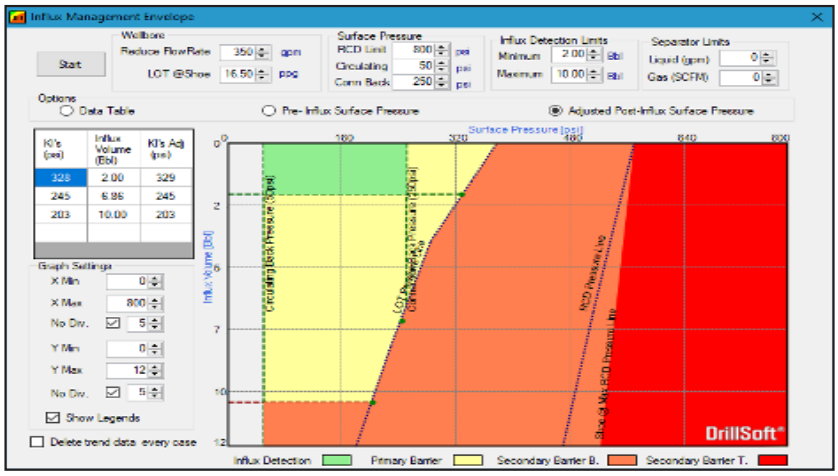
- Manage Pressure Drilling
- Underbalanced Drilling
- Surge & Swab Envelope
- Fluid Rollover
- Riserless Drilling for Pre-BOP Pump and Dump Operations
- Under Reamer
- Bit Optimization
- Directional Planning and 2D & 3D viewing
- Booster Pump for Floaters
- Hole Cleaning
- Batch Operations
- Rheology Optimization with 5 Models
- Advanced Temperature Model incorporating Heat Transfer Between formation, Casing Annular fluid and fluid in drill string





HDX+ Software

DrillSoft® HDX+ is a multiphase transient well model expanding on the Drillsoft HDX features with additional features such as Kick Simulation, Rapid Transient Influx Management Envelope, Jet Nozzles, Torque and Drag to empower the user with all necessary tools to plan the hydraulics for any well.



The Influx Management Envelope (IME) is a guide to assess the limitations for the MPD equipment in case an influx is encountered. DrillSoft HDX+ provides the tool necessary to rapidly produce transient IME to aid with the planning and execution of a well. The output above displays the transient IME which incorporates solubility and compressibility and the changes created by pressure and temperature.

The Kick Simulator and Rapid Transient Influx Management Envelope Tools are capable of simulating well control events in land and offshore wells using water, oil and synthetic based muds while incorporating solubility and compressibility coupled with the pressure and temperature changes to deliver accurate solutions. Additionally, HDX+ allows the user to simulate kick circulation using MPD equipment and use of the marine riser or choke for influx removal.

DrillSoft® HDX+ also features a Torque and Drag module that calculates axial tension, stretch, twist, hook load and torque. The module supports conventional and unconventional drilling methods which allows the modeling of all field operations including (RIH, POOH, Drilling and Rotating Off Bottom) for drill string, casing string, completion, and coiled tubing manufactured from steel and non-steel material.

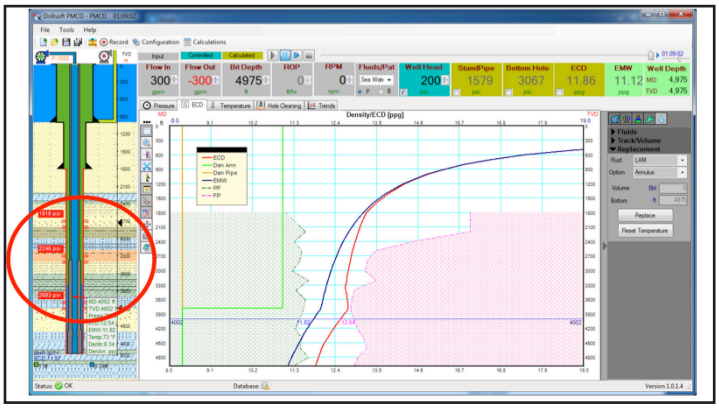
DrillSoft Torque and Drag module calculates axial tension, stretch, twist, hook load, and torque. It supports conventional and unconventional drilling operations which allows the modeling of all field operations including (RIH, POOH, Drilling and Rotating Off Bottom) for drillstring, casing string, completion, and coiled tubing manufactured from steel and non-steel materials.

Additional to the HDX features, Drillsoft® HDX+ Features also include:

- Well Control
- Rapid Transient Influx Management Envelope
- Kill Sheet
- Torque and Drag
- Jet Nozzles
- Data Import and replay from database file

PMCD Software

During PMCD operation, sea-water is normally used as sacrificial mud and no cuttings are recovered to the surface. DrillSoft® PMCD can simulate reverse circulation into the annulus while applying surface back pressure to bull head fluids into the formations and to maintain a full wellbore and balanced pressure.

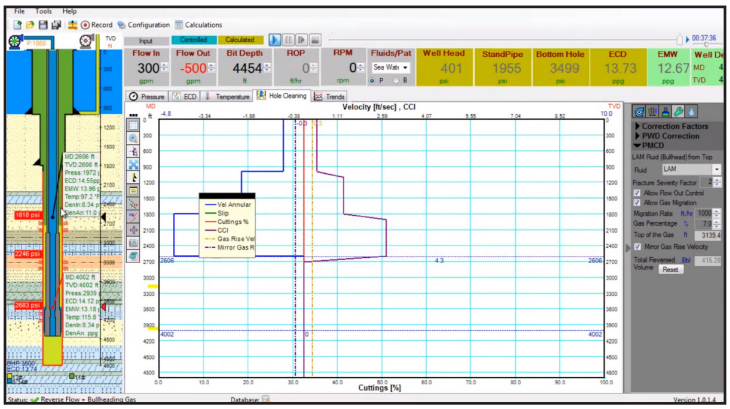


Fractured zones are designated by red indicators on well schematic. Loss of circulation severity can be adjusted by adjusting the Fracture Severity Factor. DrillSoft® PMCD allows the user to reverse circulate as indicated as Negative Red value in Flow Out.

With DrillSoft® PMCD you can visualize and monitor the different fluids in the well schematic, keep track of reverse flow volumes and changes in pressure. DrillSoft® PMCD simplifies understanding, planning and execution of PMCD procedures and operations.

Features:

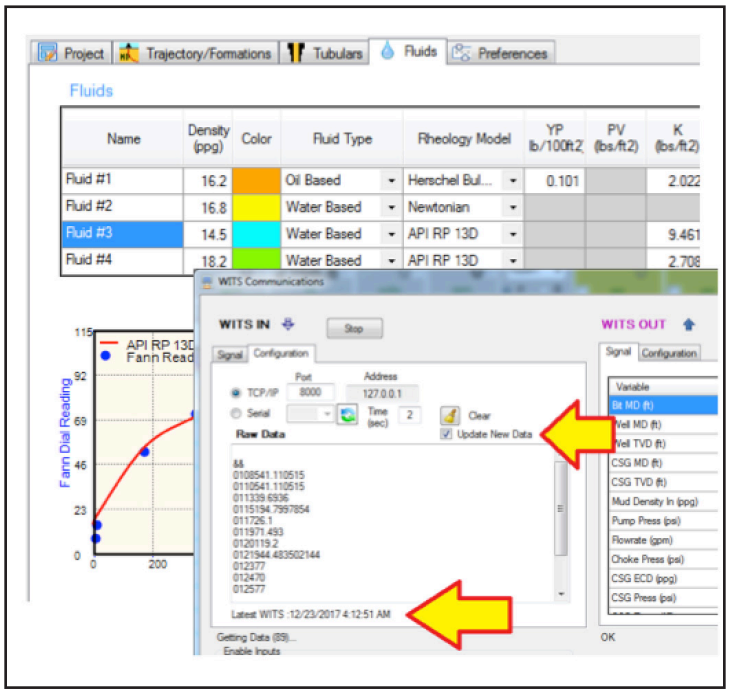
- Reverse flow into the annulus
- Gas migration/adjustable velocity/ tracking gas migration
- Ability to define total loss zones in formations due to fractures
- Tracking of rate and total volume of LAM to bullhead
- BATCH mode



DrillSoft® PMCD software also plots the annular velocity profile to compare with gas migration rate to optimize the reverse flow (bull-heading) rate and cycles. This saves the user from wasting mud by pumping unnecessary amounts of mud at high rates into the well. The user can easily determine the optimal volume and rate to bull head to counter any gas in the annulus.

Real-Time Software

DrillSoft® Real-Time can take all WITS0, WITSML and PLC signals from EDR and PWD/MWL companies or separated signal either Serial or TCP/IP. Bidirectional communication is possible (send and receive using the same cable). Additionally, it offers Real-Time monitoring by sending via web to a dedicated server signal. This option requires internet in-situ (Rig site).



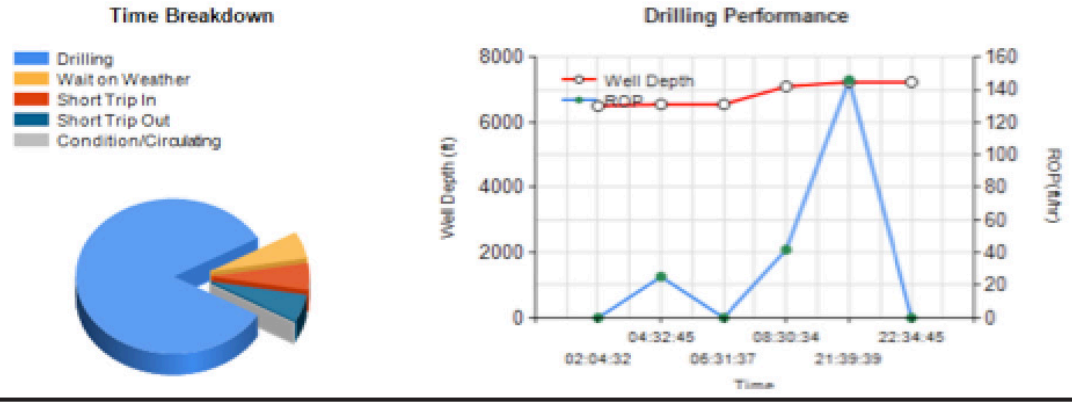
<WITSML/>™

- WITS0 (TCP or Serial), WITSML and PLC Connections.
- Transmits Web Data: Send data to our server where users can monitor the well from their office or mobile phones using secured credentials.
- Automatic well site daily report: The Wellsite Daily report adds a Time Analysis graphs: Time Breakdown based on the activity code and Drilling Performance. The engineer can add and edit reports and view a breakdown of activities.

Time	Duration	Depth	Activity	Comments
02:04:32	02:28:13	6500	2	Drilling @6500 ft
04:32:45	01:58:52	6550	34	Short Trip Out @ 6550 ft
06:31:37	01:58:57	6550	33	Short Trip In @ 6550 ft
08:30:34	13:09:05	7100	2	Drilling @ 6550 ft
21:39:39	00:55:06	7234	7	Condition and/or Circulate mud @ 7234 ft
22:34:45	01:25:14	7234	28	Wait on Weather @ 7813.5 ft

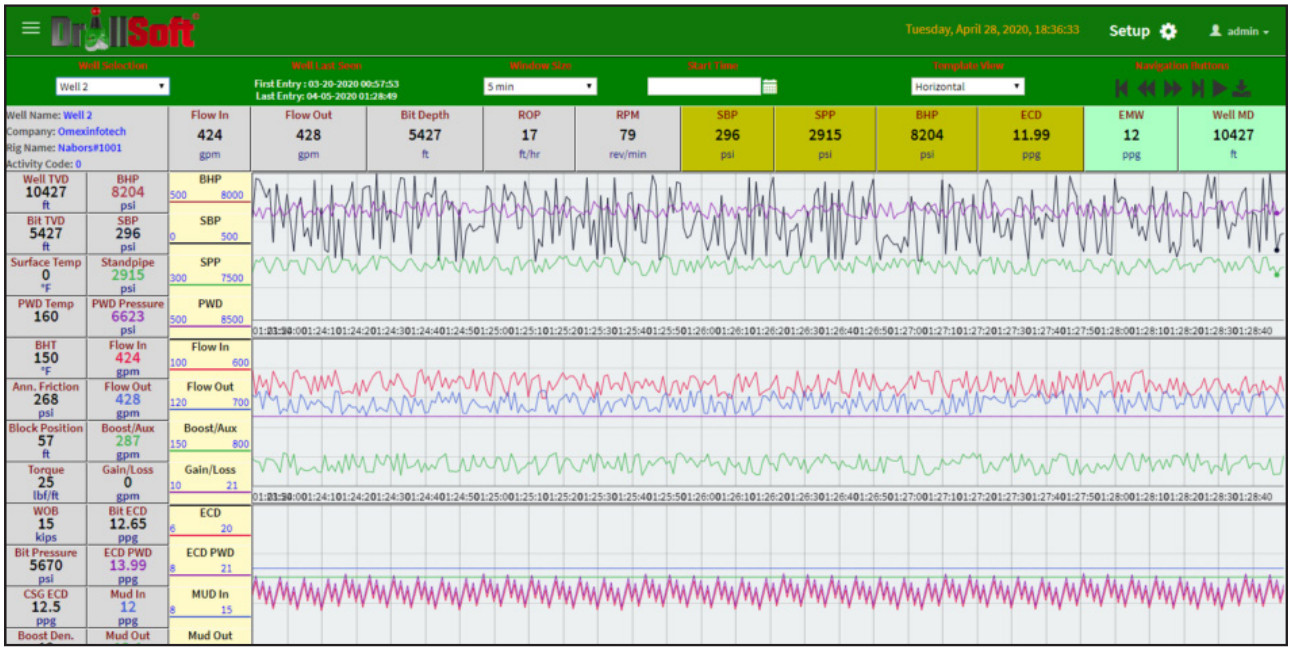
NEXT 24 HRS ACTIVITIES
Run Casing @ 9,570 ft

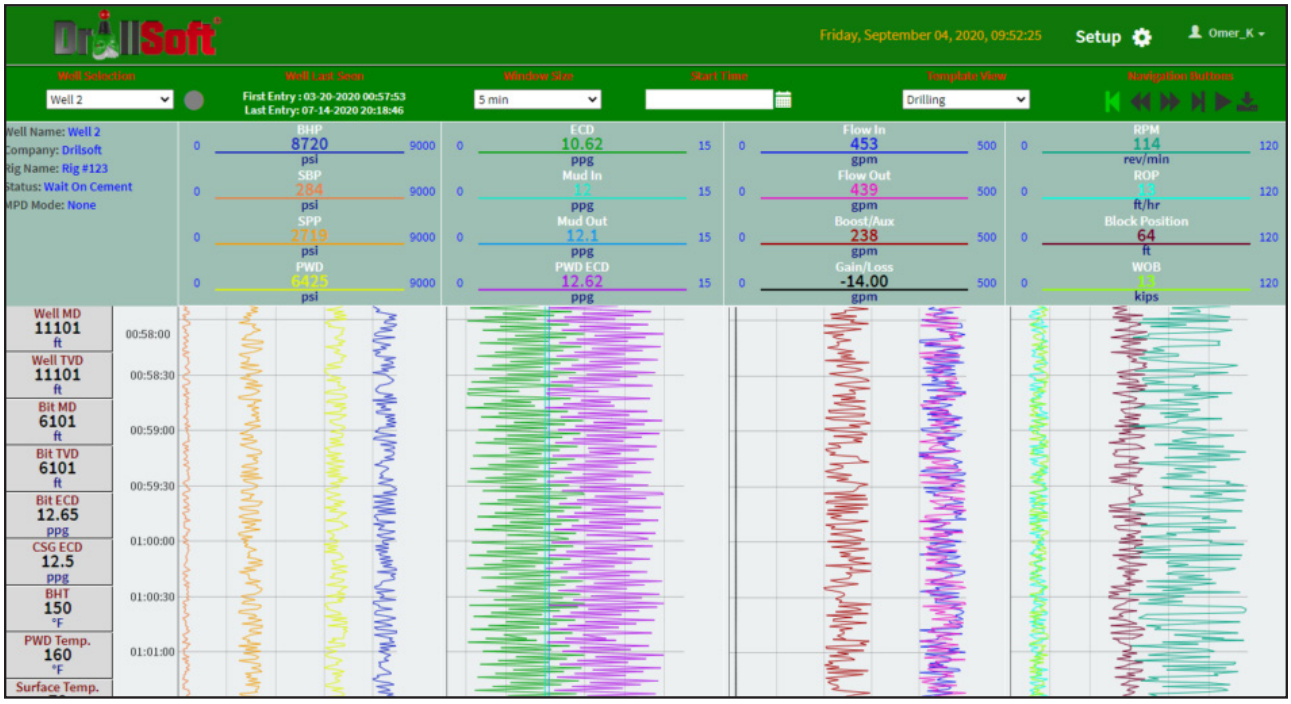
Time Analysis



Web Viewer

DrillSoft® provides an optional, easy to use, real-time, encrypted webviewer app to view data from the well using a web browser on a computer, tablet or cell phone, anywhere and anytime. The data is streamed from the well site through DrillSoft® Real-Time or DrillSoft® Choke Control System to our real-time website and can only be accessed using the secure credentials.



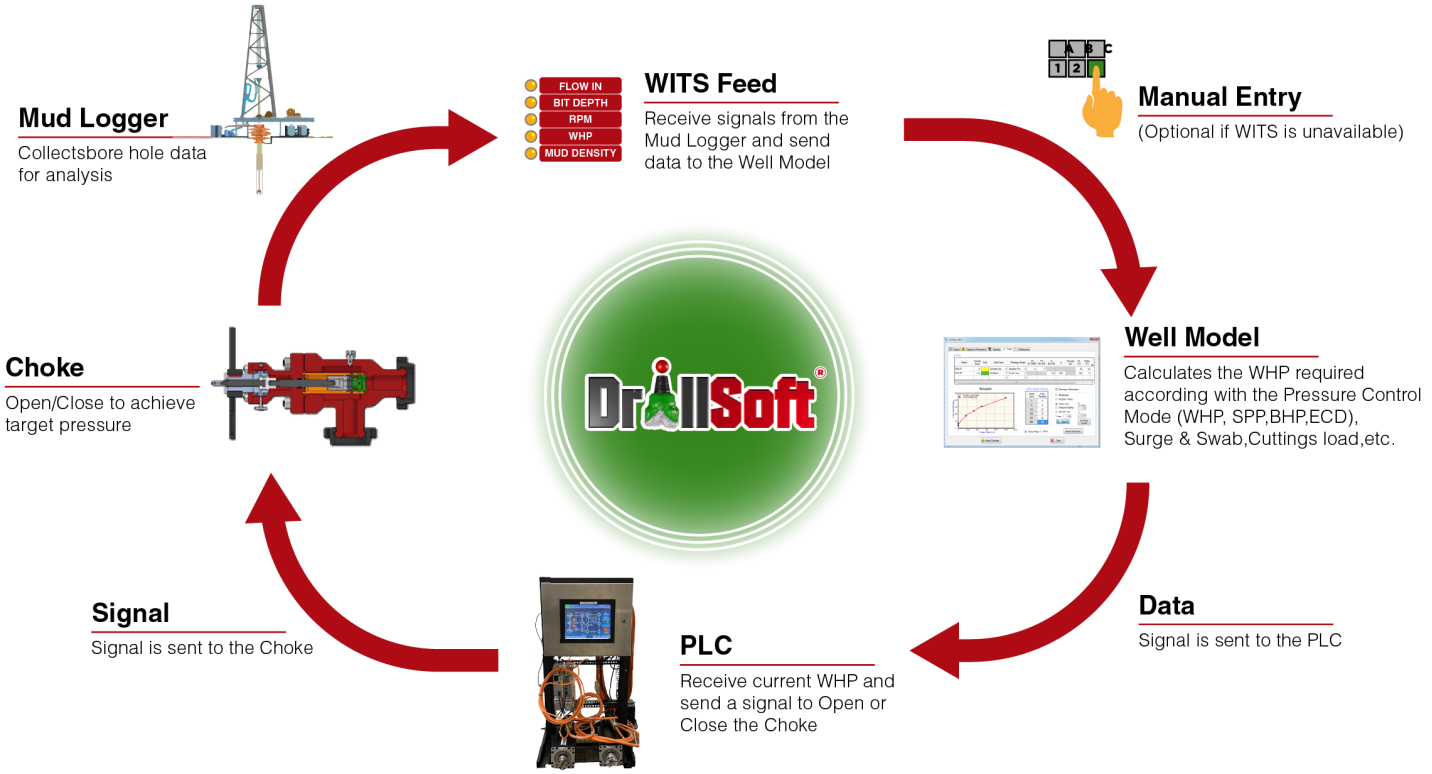


Web Monitoring system streams data through DrillSoft® Real-Time to our servers. Internet connection at the site where Real-Time is necessary to stream data. The Web Monitoring can be accessed anywhere, anytime using your laptop or cell phone. Each client is provided with secure credentials to be able to view the wells. The data on Web Monitoring can be streamed horizontaly or vertically similar to a drilling log.

Choke Control System (PLC)

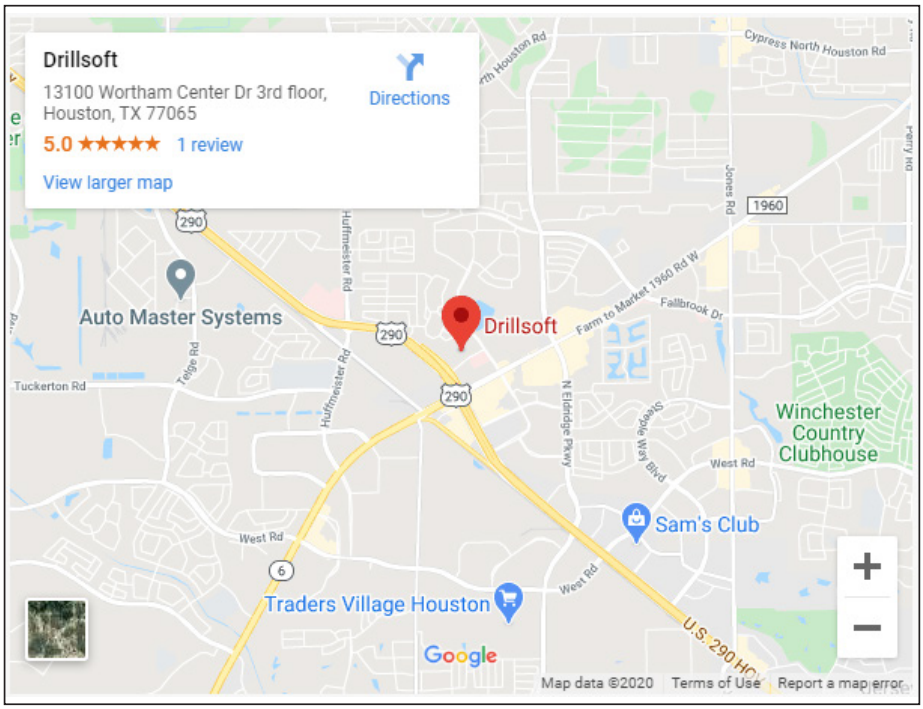
Our Programmable Logic Controllers (PLC) are integrated for choke automation. All the features from DrillSoft's HDX software are available with our PLCs.

DrillSoft® PLC systems are able to work with DrillSoft® Real-Time well model to analyze the data received from EDR and PWD via WITS0, WITSML and Direct PLC connection. Signals to adjust the choke can be sent to the DrillSoft® PLC system to adjust the Choke Position.



Contact Us

We are located in Houston, TX, USA contact us via email, phone or our social media channels below.



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